

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method of encoding a multi-channel audio signal comprising at least two audio channels, the method comprising ~~the steps of:~~

generating a single channel audio signal and encoding the single channel audio signal into a bit stream as an encoded single channel audio signal; ~~and~~

generating information from the at least two audio channels allowing to recover with a required quality level the multi-channel audio signal from the single channel audio signal and the information,

~~wherein the generating of the information comprising step comprises the steps of:~~

determining a first portion of the information for a first frequency region of the multi-channel audio signal; ~~and;~~
~~_____ encoding the first portion of the information into the bit stream as an encoded first portion of the information; and;~~

determining a second portion of the information for a second frequency region of the multi-channel audio signal, the second frequency region being a portion of the first frequency region; ~~and~~

~~_____ encoding the second portion of the information into the bit stream as an encoded second portion of the information.~~

2. (Currently Amended) A method of encoding a multi-channel audio signal comprising at least two audio channels, the method comprising ~~the steps of:~~

generating a single channel audio signal; ~~and~~

generating information from the at least two audio channels allowing to recover with a required quality level the multi-channel audio signal from the single channel audio signal and the information,

~~wherein the generating of the information comprising step comprises the steps of:~~

receiving a maximum allowable bit rate of the encoded multi-channel audio signal; ~~and~~

only determining a first portion of the information for a first frequency region of the multi-channel audio signal if a bit rate of the encoded multi-channel audio signal comprising the single channel audio signal and the first portion of the information is not higher than the maximum allowable bit rate.

3. (Currently Amended) ~~A The~~ method of encoding as claimed in claim 1, wherein the single channel audio signal is a particular combination of the at least two audio channels.

4. (Currently Amended) ~~A The~~ method of encoding as claimed in claim 1, characterized in that the information comprises sets of parameters, the first portion comprises at least a first one of the

sets of parameters, the second portion comprises at least a second one of the sets of parameters, wherein each set of parameters is associated with a corresponding frequency region.

5. (Currently Amended) ~~A-The~~ method of encoding as claimed in claim 4, characterized in that the sets of parameters comprise at least one localization cue.

6. (Currently Amended) ~~A-The~~ method of encoding as claimed in claim 5, characterized in that the at least one localization cue is selected from: an interaural level difference, an interaural time or phase difference, or an interaural cross-correlation.

7. (Currently Amended) ~~A-The~~ method of encoding as claimed in claim 1, characterized in that the first frequency region covers a full bandwidth of the multi-channel audio signal.

8. (Currently Amended) ~~A-The~~ method of encoding as claimed in claim 1, characterized in that the first frequency region substantially covers a full bandwidth of the multi-channel audio signal, the second frequency region covers a portion of the full bandwidth, and in that the determining of the second portion of the information is adapted to determine sets of parameters for both the second frequency region and a set of further frequency regions, the second frequency region and the set of further frequency regions substantially covering the full bandwidth, where in the set of

further frequency regions comprises at least one further frequency region.

9. (Currently Amended) ~~A--The~~ method of encoding as claimed in claim 8, characterized in that the single channel audio signal and the first portion of the information form a base layer of information which is always present in the encoded multi-channel audio signal, and in that the method comprises receiving a maximum allowable bit rate of the encoded multi-channel audio signal, the second portion of the information forming an enhancement layer of information which is encoded only if the bit rate of the encoded base layer and enhancement layer is not higher than the maximum allowable bit rate.

10. (Currently Amended) ~~A--The~~ method of encoding as claimed in claim 4, characterized in that the determining of the first portion of information in a particular frame of encoded information comprises determining the first one of the sets of parameters in the particular frame, and coding the first one of the sets of parameters based on the first one of the sets of parameters of a frame preceding the particular frame.

11. (Currently Amended) ~~A--The~~ method of encoding as claimed in claim 8, characterized in that the determining of the second portion of information in a particular frame of the encoded information comprises determining the sets of parameters of the

second portion in the particular frame and coding the sets of parameters of the second portion in the particular frame based on the sets of parameters of a frame preceding the particular frame.

12. (Currently Amended) ~~A--The~~ method of encoding as claimed in claim 8, characterized in that the determining of the second portion of information in a particular frame of the encoded information comprises determining the sets of parameters of the second portion in the particular frame and coding the sets of parameters of the second portion in the particular frame based on the first one of the sets of parameters of a frame preceding the particular frame.

13. (Currently Amended) ~~A--The~~ method of encoding as claimed in claim 10, characterized in that the determining comprises calculating a difference between the corresponding parameters in the particular frame and the frame preceding the particular frame.

14. (Currently Amended) An encoder for coding a multi-channel audio signal comprising at least two audio channels, the encoder comprising:

means for generating a single channel audio signal; ~~and~~
means for generating information from the at least two audio channels allowing to recover with a required quality level the multi-channel audio signal from the single channel audio signal and the information,

~~wherein the means for generating of the information
comprising, comprises:~~

means for determining a first portion of the information
for a first frequency region of the multi-channel audio signal;
and

means for determining a second portion of the information
for a second frequency region of the multi-channel audio signal,
the second frequency region being a portion of the first frequency
region.

15. (Currently Amended) An encoder for encoding a multi-channel
audio signal comprising at least two audio channels, the encoder
comprising:

means for generating a single channel audio signal; and

means for generating information from the at least two
audio channels allowing to recover with a required quality level
the multi-channel audio signal from the single channel audio signal
and the information,

~~wherein the means for generating of the information
comprising, comprises:~~

means for receiving a maximum allowable bit rate of the
encoded multi-channel audio signal; and

means for only determining a first portion of the
information for a first frequency region of the multi-channel audio
signal if a bit rate of the encoded multi-channel audio signal

comprising the single channel audio signal and the first portion of the information is not higher than the maximum allowable bit rate.

16. (Currently Amended) An apparatus for supplying an audio signal, the apparatus comprising:

| an input for receiving an audio signal, ~~and~~
| an encoder as claimed in claim 14 for encoding the audio
| signal to obtain an encoded audio signal, ~~and~~
| an output for supplying the encoded audio signal.

17. (Currently Amended) An encoded audio signal comprising:

| a single channel audio signal, ~~and~~
| information from the at least two audio channels allowing
to recover with a required quality level the multi-channel audio
signal from the single channel audio signal and the information,
| ~~wherein the information comprising, comprises:~~
| a first portion of the information for a first frequency
| region of the multi-channel audio signal, ~~and~~
| a second portion of the information for a second frequency
region of the multi-channel audio signal, the second frequency
region being a portion of the first frequency region.

18. (Original) A storage medium on which the encoded audio signal as claimed in claim 17 has been stored.

19. (Currently Amended) A method of decoding a multi-channel audio signal ~~being having been~~ encoded as claimed in claim 17, the method of decoding comprising:

obtaining a decoded single channel audio signal~~;~~
obtaining decoded information from the information allowing to recover the multi-channel audio signal from the decoded single channel audio signal and the decoded information, the decoded information ~~comprises comprising~~ the first portion of the information and the second portion of the information~~;~~~~;~~ and
applying either the first portion of the information or the first portion and the second portion of the information on the single channel audio signal to generate the decoded multi-channel audio signal.

20. (Currently Amended) A decoder for decoding an encoded audio signal, ~~said encoded audio signal having been encoded as claimed in claim 17.~~ the decoder comprising:

means for obtaining a decoded single channel audio signal~~;~~
means for obtaining decoded information from the information allowing to recover the multi-channel audio signal from the decoded single channel audio signal and the decoded information, the decoded information comprises the first portion of the information and the second portion of the information~~;~~~~;~~ and

means for applying the first portion of the information and the second portion of the information on the single channel audio signal to generate the decoded multi-channel audio signal.

21. (Currently Amended) An apparatus for supplying a decoded audio signal, the apparatus comprising:

| an input for receiving an encoded audio signal;
| a decoder as claimed in claim 20 for decoding the encoded
| audio signal to obtain a multi-channel output signal; and
| an output for supplying or reproducing the multi-channel
output signal.